

CLAIMS

What is claimed is:

1. A method for processing data packets exchanged over a packet network having data packets and voice packets comprising the steps of:
receiving data packets from a data processing device;
determining whether the data packets need to be divided into smaller data packets, dividing the data packets into divided data packets if determined to be needed and interspersing the divided data packets among the voice packets; and
sending the data packets, including the smaller data packets if divided, and the voice packets to a communications network.
2. The method of claim 1 wherein the step of determining further comprises comparing the data packets to a size threshold and determining that the data packets are to be divided if the data packets are larger than the size threshold.
3. The method of claim 1 wherein the divided data packets are of equal size.
4. The method of claim 1 wherein the divided data packets are of unequal size.
5. The method of claim 1 wherein the data processing device comprises a computer, a laptop computer, a personal digital assistant, and a cellular telephone.
6. The method of claim 1 wherein the voice packets have a higher priority than the data packets from the data processing device.
7. The method of claim 6 wherein the higher priority voice packets are processed before the data packets.

8. The method of claim 1 wherein each data packet and each voice packet is assigned a priority corresponding to the order in which the packet is processed.
9. The method of claim 8 wherein priority comprises a level of preferences.
10. The method of claim 1 wherein the communications network comprises one of a frame relay network, Asynchronous Transfer Mode network, and Internet Protocol network.
11. The method of claim 1 wherein the communications network adheres to Ethernet protocols.
12. The method of claim 1 wherein the step of receiving is performed by a first Ethernet transceiver.
13. The method of claim 1 wherein the step of sending is performed by a second Ethernet transceiver.
14. The method of claim 1 wherein the step of receiving and the step of sending is performed by the same Ethernet transceiver.
15. A method for processing data packets exchanged over a packet network having data packets and voice packets comprising the steps of:
 - receiving data packets from a data processing device;
 - determining whether the data packets need to be divided into smaller data packets, dividing the data packets into divided data packets if determined to be needed and interspersing the divided data packets among the voice packets;
 - assigning a higher priority to the voice packets than the data packets, including the smaller data packets if divided; and
 - sending the data packets, including the smaller data packets if divided, and the voice packets to a communications network.

16. The method of claim 15 wherein the step of determining further comprises comparing the data packets to a size threshold and determining that the data packets are to be divided if the data packets are larger than the size threshold.

17. The method of claim 15 wherein the data processing device comprises a computer, a laptop computer, a personal digital assistant, and a cellular telephone.

18. The method of claim 15 wherein the communications network comprises one of a frame relay network, Asynchronous Transfer Mode network, and Internet Protocol network.

19. The method of claim 15 wherein the communications network adheres to Ethernet protocols.

20. A method for processing data packets exchanged over a packet network having data packets and voice packets comprising the steps of:
receiving data packets from a communications network;
separating the data packets from the communications network into data packets destined for a phone and data packets not destined for the phone; and
assigning a higher priority to the data packets destined for the phone.

21. The method of claim 20 further comprising the step of determining whether the data packets not destined for the phone need to be divided into smaller data packets not destined for the phone, dividing the data packets not destined for the phone into divided data packets not destined for the phone if determined to be needed and interspersing the divided data packets not destined for the phone among the data packets destined for the phone.

22. The method of claim 21 wherein the step of determining further comprises comparing the data packets not destined for the phone to a size threshold and determining that the data packets not destined for the phone are to be divided if the data packets not destined for the phone are larger than the size threshold.

23. The method of claim 21 wherein the divided data packets are of unequal size.

24. The method of claim 21 wherein the divided data packets are of equal size.

25. The method of claim 20 wherein the data packets destined for the phone have a higher priority than the data packets not destined for the phone.

26. The method of claim 25 wherein the higher priority data packets destined for the phone are processed before the data packets not destined for the phone.

27. The method of claim 20 wherein each data packet destined for the phone and each data packet not destined for the phone is assigned a priority corresponding to the order in which the data packet is processed.

28. The method of claim 20 wherein the communications network comprises one of a frame relay network, Asynchronous Transfer Mode network, and Internet Protocol network.

29. The method of claim 20 wherein the communications network adheres to Ethernet protocols.

30. The method of claim 20 wherein the step of receiving is performed by an Ethernet transceiver.

31. A method for processing data packets exchanged over a packet network comprising the steps of:
- receiving data packets from a communications network;
 - separating the data packets from the communications network into data packets destined for a phone and data packets not destined for the phone;
 - determining whether the data packets not destined for the phone need to be divided into smaller data packets not destined for the phone, dividing the data packets not destined for the phone into divided data packets not destined for the phone if determined to be needed and interspersing the divided data packets not destined for the phone among the data packets destined for the phone; and
 - sending the data packets not destined for the phone including the smaller data packets if divided, to a data processing device.
32. The method of claim 31 wherein the data packets destined for the phone have a higher priority than data packets not destined for the phone.
33. The method of claim 31 wherein the communications network comprises a packet network including frame relay, Asynchronous Transfer Mode, and transport over Internet Protocol.
34. The method of claim 31 wherein the communications network adheres to Ethernet protocols.
35. The method of claim 31 wherein the step of receiving is performed by an Ethernet transceiver.
36. A method for processing data packets exchanged over a packet network having data packets and voice packets comprising the steps of:
- receiving data packets from a data processing device;
 - determining whether the data packets from the data processing device

need to be divided into smaller data packets from the data processing device,
dividing the data packets from the data processing device into divided data
packets from the data processing device if determined to be needed and
interspersing the divided data packets from the data processing device among the
voice packets;

assigning a higher priority to the voice packets;

sending the data packets from the data processing device, including the
smaller data packets from the data processing device if divided, and the voice
packets to a communications network;

receiving data packets from the communications network;

separating the data packets from the communications network into voice
packets and data packets not destined for a phone;

determining whether the data packets not destined for the phone need to
be divided into smaller data packets not destined for the phone, dividing the data
packets not destined for the phone into divided data packets not destined for the
phone if determined to be needed and interspersing the divided data packets not
destined for the phone among the voice packets;

assigning a higher priority to the voice packets; and

sending the data packets not destined for the phone including the smaller
data packets if divided, to the data processing device.

37. The method of claim 36 wherein the divided data packets are of unequal
size.

38. The method of claim 36 wherein the data processing device comprises a
computer, a laptop computer, a personal digital assistant, and a cellular
telephone.

39. The method of claim 36 wherein the higher priority voice packets are
processed before the data packets.

40. The method of claim 36 wherein the communications network comprises one of a frame relay network, Asynchronous Transfer Mode network, and Internet Protocol network.

41. The method of claim 36 wherein the communications network adheres to Ethernet protocols.

42. The method of claim 36 wherein the step of receiving data packets from a data processing device is performed by a first Ethernet transceiver.

43. The method of claim 36 wherein the step of sending data packets from the data processing device, including the smaller data packets from the data processing device if divided, and the voice packets to a communications network is performed by a second Ethernet transceiver.

44. A phone system for processing data packets exchanged over a packet network having data packets to and from a data processing device and the packet network and voice packets to and from the phone system comprising:

a user interface with the ability to place and receive phone calls comprising voice packets; and

a network manager coupled to the user interface, the data processing device and the packet network whereby the network manager determines whether to divide the data packets and intersperse the divided data packets among the voice packets.

45. The system of claim 44 further comprising a voice interface that performs conversion between analog voice and digital voice samples.

46. The system of claim 44 further comprising a processor unit to perform voice processing, call processing, and protocol processing functions of the phone system.

47. The system of claim 44 further comprising an external interface to communicate with a peripheral device comprising one of a personal digital assistant, a cellular telephone, and a laptop computer.
48. The system of claim 44 wherein the data processing device comprises one of a computer, a laptop computer, a personal digital assistant, and a cellular telephone.
49. The system of claim 44 wherein the network manager places a higher priority on voice packets than on data packets.
50. The system of claim 49 wherein the higher priority voice packets are processed by the network manager before the data packets.
51. The system of claim 44 wherein the network manager compares the size of data packets to a size threshold and divides data packets that are larger than the size threshold.
52. The system of claim 44 wherein the network manager divides the data packets into unequal size divided data packets.
53. The system of claim 44 wherein the network manager further comprises at least one Ethernet transceiver.
54. The system of claim 44 wherein the packet network adheres to Internet protocols.
55. The system of claim 44 wherein the network manager prioritizes data packets and voice packets into various priority levels.

56. A phone system for processing data packets exchanged over a packet network having data packets to and from a data processing device and the packet network and voice packets to and from the phone system comprising:

a user interface with the ability to place and receive phone calls comprising voice packets; and

a network manager coupled to the user interface, the data processing device and the packet network whereby the network manager determines whether to divide the data packets, intersperse the divided data packets among the voice packets, and place a higher priority on the voice packets than on the divided data packets, if determined to be needed.

57. A system for processing data packets over a packet network comprising:

means for receiving data packets from a data processing device;

means for determining whether the data packets need to be divided into smaller data packets, dividing the data packets into divided data packets if determined to be needed and interspersing the divided data packets among voice packets; and

means for sending the data packets, including the smaller data packets if divided, and the voice packets to a communications network

58. A system for processing data packets over a packet network comprising:

receiving data packets from a communications network;

separating the data packets from the communications network into data packets destined for a phone and data packets not destined for the phone; and

assigning a higher priority to the data packets destined for the phone.

59. A system for processing data packets over a packet network comprising:

means for receiving data packets from a data processing device;

means for determining whether the data packets from the data processing device need to be divided into smaller data packets from the data processing device, dividing the data packets from the data processing device into divided

data packets from the data processing device if determined to be needed and interspersing the divided data packets from the data processing device among voice packets;

means for assigning a higher priority to the voice packets;

means for sending the data packets from the data processing device, including the smaller data packets from the data processing device if divided, and the voice packets to a communications network;

means for receiving data packets from the communications network;

means for separating the data packets from the communications network into voice packets and data packets not destined for a phone;

means for determining whether the data packets not destined for the phone need to be divided into smaller data packets not destined for the phone, dividing the data packets not destined for the phone into divided data packets not destined for the phone if determined to be needed and interspersing the divided data packets not destined for the phone among the voice packets;

means for assigning a higher priority to the voice packets; and

means for sending the data packets not destined for the phone including the smaller data packets if divided, to the data processing device.